

What is claimed is:

1. A virus-like particle (VLP) comprising capsid proteins from at least two types of viruses.
- 5 2. The VLP of claim 1 wherein said viruses are animal viruses.
3. The VLP of claim 2 wherein said viruses are human viruses.
4. The VLP of claim 3 wherein said viruses are different types of Human Papilloma Virus (HPV).
5. The VLP of claim 4 wherein said types of HPV are types 6 and 16.
- 10 6. The VLP of claim 4 or 5 wherein the capsid proteins comprise the major capsid protein late 1 (L1).
7. The VLP of claim 4 or 5 wherein the capsid proteins comprise the minor capsid protein late 2 (L2).
8. The VLP of claim 4 or 5 wherein the capsid proteins comprise L1 from one
- 15 9. The VLP of claim 6, further comprising the L2 capsid protein.
10. A composition comprising the VLP of claim 1.
11. The composition of claim 10 wherein the VLP is purified for immunization.
12. The composition of claim 11 wherein the VLP comprises the VLP of claim 9.
- 20 13. The composition of claim 12, further comprising an adjuvant.
14. The composition of claim 13 wherein the adjuvant is MF59.
15. A method for producing VLPs comprising capsid proteins from at least two types of viruses, said method comprising
 - a) cloning said capsid proteins into expression cassettes comprising the same promoters and termination sequences; and
 - 25 b) expressing said cassettes in the same host cell.
16. The method of claim 15 wherein the host cell is a yeast cell.
17. The method of claim 16 wherein the yeast is *Saccharomyces cerevisiae*.
18. The method of claim 15 wherein said viruses are different types of HPV.
- 30 19. The method of claim 18 wherein said types of HPV are type 6 and 16.
20. The method of claim 15 or 18 wherein the capsid proteins comprise L1.

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21. The method of claim 15 or 18 wherein the capsid proteins comprise L2.
22. The method of claim 15 or 18 wherein the capsid proteins comprise L1 from one virus type and L2 from a second virus type.
23. The method of claim 20, further comprising L2 capsid proteins.
- 5 24. The method of claim 23 wherein said L1 protein expression cassettes are cloned into non-integrative vectors, and said L2 proteins expression cassettes are cloned into integrative vectors.
25. The method of claim 24 wherein the non-integrative vector is pBS24.1.
26. The method of claim 24 wherein the integrative vector is pUC8.
- 10 27. A host cell comprising vectors for expressing capsid proteins from at least two types of viruses.
28. The host cell of claim 27 wherein said viruses are different types of HPV.
29. The host cell of claim 28 wherein said types of HPV are types 6 and 16.
30. The host cell of claim 29 wherein said capsid proteins comprise L1.
- 15 31. The host cell of claim 29 wherein said capsid proteins comprise L2.
32. The host cell of claim 27 or 29 wherein said capsid proteins comprise L1 from one virus type and L2 from a second virus type.
33. The host cell of claim 30, further comprising L2 capsid proteins.
34. The host cell of claim 33 wherein said host cell is a diploid cell.
- 20 35. The host cell of claim 27 or 34 wherein said host cell is yeast.
36. The host cell of claim 35 wherein said yeast is *Saccharomyces cerevisiae*.
37. A method for inducing an immune response against more than one type of virus comprising administering the VLP of any of claims 1-5 or 9.
38. A method for inducing an immune response against more than one type of virus comprising administering the VLP of claim 6.
- 25 39. A method for inducing an immune response against more than one type of virus comprising administering the VLP of claim 7.
40. A method for inducing an immune response against more than one type of virus comprising administering the VLP of claim 8.
- 30 41. A method for expressing capsid proteins from at least two types of viruses, said method comprising

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- a) cloning said capsid proteins into expression cassettes comprising the same promoters and termination sequences; and
- b) expressing said cassettes in the same host cell.

42. The method of claim 41 wherein the host cell is a yeast cell.

5 43. The method of claim 42 wherein the yeast is *Saccharomyces cerevisiae*.

44. The method of claim 41 wherein said viruses are different types of HPV.

45. The method of claim 44 wherein said types of HPV are type 6 and 16.

46. The method of claim 41 or 45 wherein the capsid proteins comprise L1.

47. The method of claim 41 or 45 wherein the capsid proteins comprise L2.

10 48. The method of claim 41 or 45 wherein the capsid proteins comprise L1 from one virus type and L2 from a second virus type.

49. The method of claim 46, further comprising L2 capsid proteins.

50. The VLP of claim 1 wherein said VLP induces an immune response against both types of viruses.

15 51. A composition comprising the VLP of claim 50.